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MEMORANDUM

TO: "Asbestos in Soil" Workgroup

FROM: Sarah Weinstein
Paul Locke

DATE: September 12, 2003

SUBJECT: Conceptual Recommendations

To build on the Workgroup's meetings in May and June and thoughtful discussion about the issues surrounding the assessment and cleanup of asbestos in soil, we would like to present a "conceptual" proposal for establishing and clarifying standards for dealing with situations involving this contaminant. This memo describes an approach that DEP could take to ensure that situations involving asbestos in soil that are likely to present a significant risk to public health and the environment are reported to DEP, assessed appropriately, and cleaned up adequately.

We have scheduled a Workgroup meeting for September 23, 2003, 9:30-noon in the "Commonwealth" Conference Room on the 2nd Floor of DEP's Boston Office at One Winter Street. We hope to get your feedback about this proposal at that meeting.

1. Background

Asbestos is an environmental contaminant frequently encountered at previously developed "brownfields" sites. It is highly hazardous to human health when people inhale it. Where there is no route of exposure (e.g., where it is buried at depth in soil or under another type of barrier), it presents low direct risks to public health, although care needs to be taken to ensure that the asbestos will not be brought to the surface by disturbing its cover or by excavation.

Asbestos in the environment most commonly results from two types of human actions: 1) renovation or demolition of buildings that contained asbestos without the benefit of modern removal and management techniques; and 2) disposal of asbestos-containing material at the site, either before today's rules were promulgated (e.g., the Bethlehem Steel landfill in Quincy) or as the result of illegal disposal. Fires at buildings that contained asbestos can release significant quantities of this material into the environment. There are also residues from former commercial asbestos mining operations in several Western Massachusetts towns (Chester, Blandford, Plainfield, and Hinsdale). These mines were located at the

southern edge of a geologic formation known as the "Talc-Serpentine District", in which naturally occurring asbestos extends from Western Massachusetts into Vermont. Naturally occurring low levels of asbestos are also found occasionally in other parts of the Commonwealth (e.g., road cuts for I-195 in Southeastern Massachusetts). Due to use of asbestos in building materials, fibers may be found in soil around buildings, either from residuals from construction or from weathering of asbestos-containing materials used on the building's exterior. In urban areas, most ambient air concentrations range from $3x10^{-6}$ to $3x10^{-4}$ f/mL, but may range up to $3x10^{-3}$ f/mL as a result of local sources (ATSDR, 2001). These ambient levels fall within a risk range of 10^{-7} to 10^{-5} (assuming 24 hour/day, 70-year exposures to those levels). There is very little data available on typical levels of asbestos in soil in urban environments, but one study of street sweepings indicates that the majority of asbestos structures, assumed to be from brake linings, are shorter (< 2 μm) than those considered to be of greater human health concern (> 5 μm) (ATSDR, 2001).

Building renovations and demolitions involving asbestos are regulated by the U.S. EPA under NESHAP, and by BWP under 310 CMR 7.00. The federal program has been delegated to DEP. Anyone engaging in renovation or demolition work is required to survey the building for asbestos, and notify BWP at least 10 days before work commences if asbestos is present. This provides BWP regional staff the opportunity to review plans and conduct inspections, to ensure that the renovation or demolition work will not create a condition of air pollution. Asbestos removal work must be performed by contractors holding an appropriate license from the MA Dept. of Labor and Workforce Development (Division of Occupational Safety, DOS). The notifications, which are submitted by asbestos contractors (and can now be submitted on-line), satisfy notification requirements of DEP, DOS, and US EPA.

Wastes containing asbestos are regulated by BWP under the solid waste rules, 310 CMR 19.000. In general, waste containing any amount of asbestos must be disposed of as a "special waste". It must be shipped to a disposal facility with an approval to accept it, and it must be accompanied by a specific shipping document. Section 6 of this memo contains recommendations for modifying this rule for certain soils containing asbestos fibers.

At many construction sites, asbestos is found to have already been released to the environment. In 1987, the Massachusetts Contingency Plan established a "reportable quantity" for asbestos of one pound released in a 24-hour period. However, this "RQ" does not apply to sites where the total quantity released cannot be determined, and the only information available is a site history indicating that asbestos may have been present there in the past and/or analytical data indicating a concentration of asbestos fibers in soil. BWP's asbestos staff has generally managed cleanups where asbestos is the only contaminant, while BWSC generally has overseen a number of cases where asbestos is mixed with other contaminants (with advice from the BWP asbestos staff).

DEP's proposal to address asbestos in soil, as presented below, has been substantially modified from an initial proposal that was provided to the Workgroup earlier this year, as a result of discussions within DEP and the external Workgroup meetings. Key features of the revised proposal include:

- New MCP notification criteria for debris containing asbestos;
- New MCP criteria for Limited Removal Actions addressing asbestos;
- Retained BWP notification of the active management of asbestos containing material;
- Standardized BWP Best Management Practices (BMPs);
- Adoption of a risk-based approach to determine "How clean is clean enough?"; and
- New Solid Waste exemption from the definition of "Special Waste" for asbestos fibers in soil.

Figure 1 describes the conceptual process for notifying DEP of releases of asbestos in soil, assessing these releases, and cleaning them up where needed.

2. Recommendations for Notification

Table 1 and Figure 2 summarize the existing and proposed notification requirements described below. The recommendations below are intended to provide clear guidance on when notification to DEP would be required. While this proposal would result in the reporting of more asbestos sites than is currently required by regulation, it does not capture all sites with any level of asbestos. This proposal is consistent with current MCP notification requirements, which requires notification of sites that are likely to pose a significant risk to public health, safety, welfare, or the environment if they remain unaddressed. The workgroup recognizes that the timing and nature of notification is a risk management decision.

- **BWP notification would continue to be required whenever asbestos in soil is going to be excavated or otherwise disturbed by remediation or construction.** This notification is required under 310 CMR 7.15 and DEP will continue to use existing procedures (e.g., notifications are submitted at least 10 days prior to the start of work unless DEP issues a waiver of the deadline, and would contain the same information that BWP currently receives). This notification allows BWP to insure the safe handling of asbestos-contaminated soil and the implementation of appropriate BMPs, to prevent further releases and the creation of "conditions of air pollution", in accordance with DEP's air quality rules and our NESHAP delegation. This requirement satisfies the notification requirements of DOS and the US EPA (for whom BWP acts as the reporting "intake" agency). Once a coordinated BWP/BWSC approach (as outlined below) has been established and all parties have obtained experience with it, BWP may revisit this notification and establish *de minimis* levels below which these notifications will not be required.

- **BWSC should establish notification requirements, consistent with the existing framework of the MCP, for sudden, time critical and historic releases of asbestos to the environment (see below for specific recommendations).** "Asbestos" is already listed as a Hazardous Material under 310 CMR 40.1600, where it is currently defined in the MCP by a CAS number; it is broadly considered to include unconsolidated fibers as well as friable and non-friable debris containing asbestos. Clearer notification requirements for sudden and time-critical releases will initiate the assessment and remediation at sites requiring immediate action. Notification requirements for historical asbestos releases will encourage property owners and developers to improve their pre-construction site investigations. If asbestos in soil is identified as part of a site investigation, its remediation can be planned before construction equipment is mobilized. This should result in fewer "panic" phone calls to DEP and more thoughtful planning for these situations (i.e., we want people to "think before they dig").

  Note that the proposed 120-day notification conditions would allow for the implementation of a Limited Removal Action (LRA) at sites with small quantities of asbestos containing soils (the Workgroup has proposed increasing the LRA volume for asbestos-contaminated soils from 20 yd^3 to 30 yd^3 or more) to eliminate the need for notification under the MCP. Any excavation and management of asbestos contaminated soil that is part of an LRA would include notification of BWP.

  We propose the following MCP notification requirements:

- The existing 2-hour reporting requirement for releases of any oil or hazardous material (including asbestos), at any concentration, that pose an Imminent Hazard [310 CMR 40.0321(1)(d)] should be retained.

- The existing 2-hour reporting requirement for any sudden release of asbestos (such as during improper building demolition) that exceeds the Reportable Quantity of one pound (310 CMR 40.0311) should be retained. New guidance should clarify how the one-pound criterion applies to Asbestos Containing Material (ACM), which is the most common form in which asbestos is released into the environment.

- A new 2-hour reporting requirement should be established for certain types of Debris[1] containing more hazardous forms of asbestos at concentrations equal to or greater than 1% found on or in surficial soil (0-1' below grade). The forms of asbestos covered by this requirement should be limited to materials that readily release asbestos fibers to the surrounding environment, such as asbestos-containing insulating materials, spray on fireproofing, and plaster. The combination of high exposure potential and likelihood of airborne asbestos fibers is a combination that *could* pose an Imminent Hazard, similar to existing requirements [310 CMR 40.0321(2)(b)] for other hazardous materials. This reporting threshold would also apply to Debris containing these materials that is uncovered (made surficial) during an excavation. BWP will prepare a list of the specific materials and types of asbestos to be covered.

  A 2-hour report is appropriate because these conditions have the potential to pose the highest hazard to public health from asbestos in soil, where it is most likely to become airborne and reach receptors. As with any 2-hour notification under the MCP, an Immediate Response Action (IRA) would be conducted to identify and implement any action needed to prevent exposure to surficial asbestos (e.g., removal or cover).

- A new 120-day reporting requirement should be established for Debris containing certain hazardous forms of asbestos at concentrations equal to or greater than 1% found at depths greater than 1 foot below grade. The forms of asbestos covered by this requirement should be limited to materials that readily release asbestos fibers to the surrounding environment, such as friable asbestos-containing insulating materials, spray on fireproofing, and plaster. In general, these materials would be the same as those listed in the bullet above.

- A new 120-day reporting requirement should be established for other friable Debris containing asbestos at a concentration equal to or greater than 1% and located at any depth, including material that was originally non-friable but which has become friable due to the actions of weathering, demolition or other forces. The forms of asbestos covered by this requirement would be consistent with the federal definition of "Regulated Asbestos Containing Material" ("RACM")[2], such as roof tiles, shingles, pipe, roofing felts, caulking putties and stucco that have become friable or are likely to become friable.

[1] "Debris" is used in this proposal as it is already defined in the MCP (310 CMR 40.0006). To summarize, "Debris" means solid material that is a manufactured object, plant or animal matter that is intended for disposal or is otherwise no longer serving its intended use, including demolition and construction waste.

[2] RACM ("Regulated Asbestos-Containing Material") is (a) friable asbestos material (e.g., thermal, fire-proofing or acoustic insulation), (b) Category I non-friable ACM (e.g., gaskets, resilient floor covering or asphalt roofing product) that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding,

- No MCP notification is proposed for asbestos if the site conditions do not otherwise pose an Imminent Hazard, and

    - asbestos is present at the site only in the form of unconsolidated fibers in soil (with no identifiable source);

    - the concentration of asbestos in friable or non-friable Debris at the site is less than 1%, regardless of depth and location;

    - asbestos is present in non-friable Debris that is likely to remain non-friable.

In general, asbestos in a truly nonfriable matrix is considered to pose less of a risk than friable asbestos. However, DEP recognizes that, with exposure to weather over time, nonfriable matrices can deteriorate and become friable, or can decompose so that a mixture of unconfined asbestos fibers and debris is present in the environment. In practice, this approach may bring most ACM found in the environment into the 21E system (even if it started out as non-friable), because once it has been dumped in the environment, breakage during dumping and weathering over time starts to break up most ACM matrices, and fibers are released. U. S. EPA has established definitions and procedures (RACM) for determining if a material is of regulatory concern due to its current condition, regardless of the friability of the original source material. However, EPA's criteria do not establish "bright lines", and implementation requires that subjective decisions must be made in the field. In order to clarify and standardize the MCP notification requirements, we propose to reference specific materials (e.g., acoustic insulation) as much as possible. We could also use EPA's published definitions to catch remaining situations of concern (please note that we are still working on the exact language).

Please also note that the MCP requires notification decisions to be made based on current conditions at the site (in terms of potential for exposure). A site may not need to be reported based on current activities that are taking place there (e.g., it is undeveloped and access is restricted, or it is the location of older buildings that were demolished some time ago and have not been redeveloped). However, if site uses change so that people can be exposed to detected contamination, there may be a reporting obligation. Most owners who have concrete plans for redeveloping their property consider the new activities and uses when they make their reporting decisions. Low levels of contamination at property for which there are no development plans can remain unreported as long as site conditions do not change.

The recommendation not to require notification based on unconsolidated asbestos fibers in soil is based on a detailed review of the available analytical methods for asbestos in soil, which confirms that, at the present time, there is no standard analytical method available to reliably quantify asbestos fibers in a soil matrix. The currently available approaches can determine whether asbestos fibers are "present" or "not present" in the sample. Notification criteria based on "present"/"not present" results would be very crude measures of the potential risk posed by the site. We recommend that DEP not propose notification criteria for asbestos fibers in soil at the current time because (a) the analytical methods cannot differentiate between high and low risk sites; (b) most asbestos sites that have come to DEP's attention include at least some Debris containing asbestos that would otherwise trip a new notification requirement; and (c) data from the US EPA elutriator method indicate that asbestos fibers in soil alone (without source debris) may pose low-to-moderate health risks; and (d) the existing notification requirement for

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grinding, cutting or abrading, or (d) Category II non-friable ACM (cementious pipe, shingles, roof tiles, transite board) that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material…(EPA-340/1-90-018)

Imminent Hazards can be used to address sites not otherwise captured by the proposed criteria. As US EPA and ASTM develop more analytical methods specific to asbestos fibers in soil, we recommend that DEP revisit this issue.

3. Recommendations for Case Management

- Relatively small, confined releases of Debris containing asbestos will be managed under the BWP 10-day notification and BMPs, as long as removal occurs within 120-days of discovery (taking advantage of expanded LRA provisions for asbestos).

- "Historical" asbestos releases would be managed under the MCP. LSPs would provide Waste Site Cleanup Opinions to ensure that assessments and remediation meet the MCP's requirements (see Section 4 below). LSPs would need to rely on asbestos consultants and contractors licensed by the Division of Occupational Safety, who would continue to provide the same services that they do today. Over time, we expect that the 21E program's incentives for adequate work and the oversight/management provided by LSPs will improve the quality of work performed by licensed asbestos contractors and consultants in these situations.

- As noted above, BWP would continue to receive notifications of active management of asbestos in soil, to provide the opportunity to ensure that excavation and other activities do not create conditions of air pollution. BWP is developing a standard set of "Best Management Practices" that would be available to guide active handling of asbestos in soil. BWP will continue to use all the compliance and enforcement tools that it currently has to ensure that asbestos is soil is properly handled.

- BWSC staff would audit reports involving asbestos contamination as they currently do for other contaminants. During a transition period (to be defined through further inter-Bureau discussions), BWP asbestos staff will provide technical assistance for these audits, and should have any site inspections they perform count toward BWSC's audit requirements (as well as counting toward BWP's inspection targets).

- BWP would retain its existing authority to pursue enforcement actions for improper demolition or renovation involving ACM that result in releases of asbestos into the environment (under 310 CMR 7.00), and for improper/illegal disposal of C&D debris (under 310 CMR 19.000). Where these problems are found, responsible parties and property owners will be ordered to remove debris containing ACM with short deadlines, and to remove all improperly disposed debris, visible asbestos and ACM. If confirmatory sampling indicates the continued presence of asbestos in soil, then the site may be turned over to the 21E program to ensure that the cleanup meets the "no significant risk" standards (see Section 4 below). If a site where C&D debris has been found to be improperly disposed of is being addressed under the Solid Waste Regulations (310 CMR 19.000), then DEP may consider it to be "Adequately Regulated" for MCP purposes, and would not require LSP Opinions, etc.). As above, the same cleanup decision guidelines that would apply under the MCP would be used at these "Adequately Regulated" sites.

4. Recommendations for Cleanup Decisions ("How Clean is Clean Enough?")

- Debris containing asbestos at a concentration equal to or greater than 1% in accessible soil (0-3 feet, unpaved) should be defined in the MCP as a "source of asbestos to ambient air", triggering the existing requirement [310 CMR 40.1003(5)] to eliminate or control each source

of OHM in order to achieve a Permanent Solution. An AUL would be required for Debris containing asbestos at a concentration equal to or greater than 1% in soil at depth (deeper than 3 feet) to prevent the asbestos from becoming a source to ambient air.

- A risk-based approach should be used to make "how clean is clean enough" decisions for sites involving asbestos in soil under the MCP Method 3 risk characterization rules. The MCP approach includes the use of measures to eliminate potential exposure (such as a cap), as well as those that reduce environmental concentrations (such as removal and disposal).

- Asbestos in soil along utility lines is considered to have potential for exposure via current uses (e.g., utility repairs, foundation work, exposure to construction workers).

- Low levels of asbestos fibers can remain in some soil matrices without a barrier and AUL where it can be demonstrated that the asbestos presents an insignificant exposure (and therefore an insignificant risk) because its disturbance would not release enough fibers into the air to reach receptors. A decision to leave such low levels of asbestos in soil without a barrier to exposure must be based on a demonstration that the risks are truly insignificant, based on one of the methods described in Figure 3.

  DEP is developing guidance for this demonstration, which would include several analytical options, including the use of DEP's "dust generation" model, EPA's "Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Materials " (i.e., the "Tumbler Method"), or performance of a site-specific pilot study (See Figure 3). The MCP compliance concentration for demonstration of "No Significant Risk" for residential exposures would require risks to be reduced below a range of 1 x 10 –5 to 1 x 10 –6, or 0.00004-0.0004 structures/cm^3 in the ambient air. The demonstration would need to address both "on-site" and "off-site" receptors that could be affected by airborne asbestos.

- At sites where notification is not currently required, remediation may still be necessary to eliminate a Significant Risk, pursuant to 310 CMR 40.0370. While such response actions would be conducted without the submittal requirements, approvals and fees of the MCP, management of the contaminated soil would still be subject to any applicable BWP requirements.

We recommend that DEP make a significant effort to educate LSPs, asbestos contractors, and their clients about these requirements. We expect that DEP will follow up with audits and possibly enforcement actions where asbestos contamination is inappropriately "risked away". Implementation discussions (see below) should focus on a significant DEP education and audit/enforcement through a transition period, as resources allow, to ensure that PRPs, LSPs and asbestos contractors are using the guidelines appropriately.

5. Analytical Methods for Site Assessment and Risk Characterization

- To account for the variability of asbestos distribution in soil matrices, assessments should rely on an adequate number of samples, especially in relatively heterogeneous matrices (to meet data quality objectives), or rely upon methods that incorporate large volumes of soil per sample.

- No standard analytical method exists for measuring asbestos fibers in soil. Typically, methods designed for measuring asbestos in bulk material have been applied to the soil matrix, although the resulting data has been characterized as unreliable and not representative. It has been reported

that some laboratories will now report asbestos as being "present" or "not present" in soil using these methods. Levels detected below 1% may also be reported by labs as traces.

Both PLM and TEM can be used to analyze soil samples to determine the nature and extent of asbestos contamination (MCP Phases I and II), but are inadequate for use in a quantitative risk assessment. TEM identifies a variety of fiber types, including smaller and/or narrower fibers that may not be seen with PLM, due to increased magnification. Using the site's history and potential for human exposure as a guide, some portion of samples determined to be ND by PLM should be analyzed with TEM.

- The "Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Materials" (or "*Superfund Method*") is designed to measure the expected amount of asbestos released to the air in respirable dust from asbestos-contaminated soil. The results are measured in air (not soil), relying upon standard and accepted protocols. Since the results are directly applicable to the exposure pathway of concern (the inhalation route), they may be used in combination with estimates of dust generation to quantify potential risk.

    - This Method is currently being used to inform DEP decisions at the MDC North Point Park project and CA/T soil stockpiles.

6. Disposal of Excavated Soil Containing Asbestos: "Special Waste" Exemption

Disposal options (or lack thereof) for soil containing low levels of asbestos fibers has been identified as a significant issue by the external workgroup. DEP currently defines soil containing <u>*any quantity*</u> of asbestos as a "Special Waste" under 310 CMR 19.00, with three exceptions:

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310 CMR 19.061(6)(b)3. Requirements for certain classes of asbestos
wastes. The following asbestos wastes are not subject to the provisions
of 310 CMR 19.061 except as specified at 310 CMR 19.061(6)(b)1.a.:
      a. vinyl asbestos tile (VAT);
      b. asphaltic asbestos-containing materials such as roofing felts,
      roofing shingles and asphalt siding products (Note: This does not
      include other asbestos containing roofing shingles and siding
      products such as those containing a cementitious binding
      characterized as being hard and brittle.); and
      c. other asbestos waste designated by the Department.
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We recommend that DEP's Solid Waste program add a fourth criterion to the asbestos waste exemptions to allow soil containing some *de minimis* levels of asbestos fibers to be accepted by in-state landfills as solid (not "special") waste. Conceptually, a framework would be developed to allow soil containing some unconsolidated asbestos fibers to be used as shaping/grading material at landfills, to be used as daily cover, or to be disposed of in the landfill. DEP would publish sampling protocols to document that soil directed to landfills for use/disposal meets allowable levels of asbestos fibers and is acceptably free of asbestos "chunks".

The necessary changes to the solid waste regulations would be promulgated concurrently with the proposed "Wave 2" changes to the MCP. Such a change does not guarantee that landfills will accept this material, but it would be within their operating permit to do so without further DEP approval.

7. Implementation

- The MCP needs to be amended to establish the recommended reporting requirements.

- The solid waste regulations (310 CMR 19.000) need to be amended to exempt low levels of unconsolidated asbestos fibers in soil from the definition of "Special Waste".

- As part of the regulation development process, the project managers should present the issues and recommendations to the Waste Site Cleanup Advisory Committee and Solid Waste Advisory Committee, and obtain feedback.

- Guidance on risk assessment (including use of analytical methods to demonstrate NSR where low levels of asbestos will remain at a site in surficial soil, and a generic concentration below which an AUL would not be required), sampling and use of analytical techniques, and BMPs for excavation/storage/transport of asbestos in soil need to be finalized. Drafts should be available for public review with the proposed MCP and solid waste amendments.

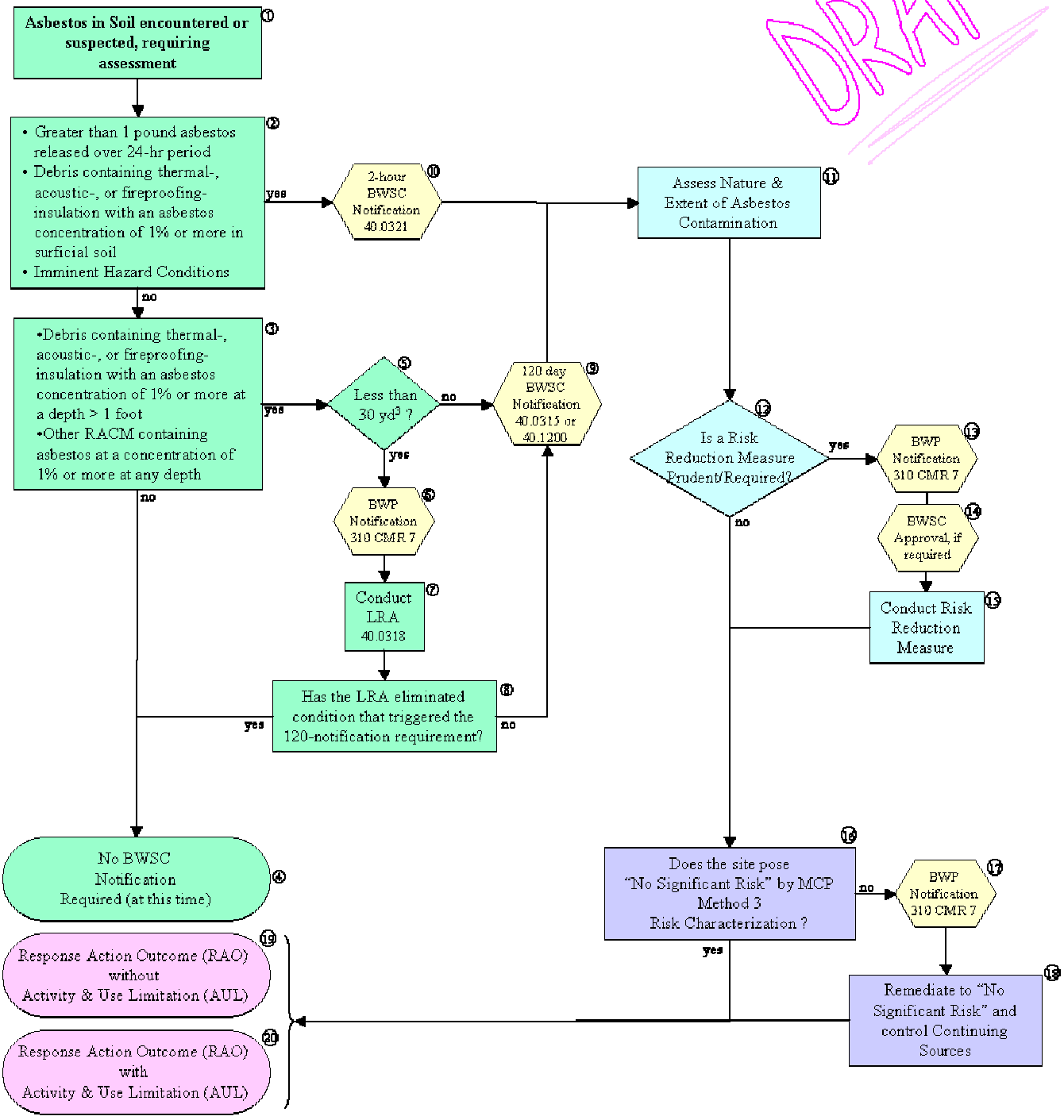
- Coordination protocols between regional BWP asbestos staff and BWSC staff who receive notifications, and plans for RAMs and IRAs need to be developed, to ensure that BWP has a means to ensure that it is receiving proper notifications of active site work involving asbestos in soil, and BWSC can check to ensure that releases are being reported.

- As promulgation of the MCP and solid waste amendments approaches, a communications strategy should be developed to inform LSPs, asbestos contractors and consultants, and the development community of the new rules, BMPs and other guidance.

- Once the communications strategy is implemented, compliance inspections/audits and follow up enforcement where necessary should be undertaken (with publicity for enforcement actions).

Figure 1

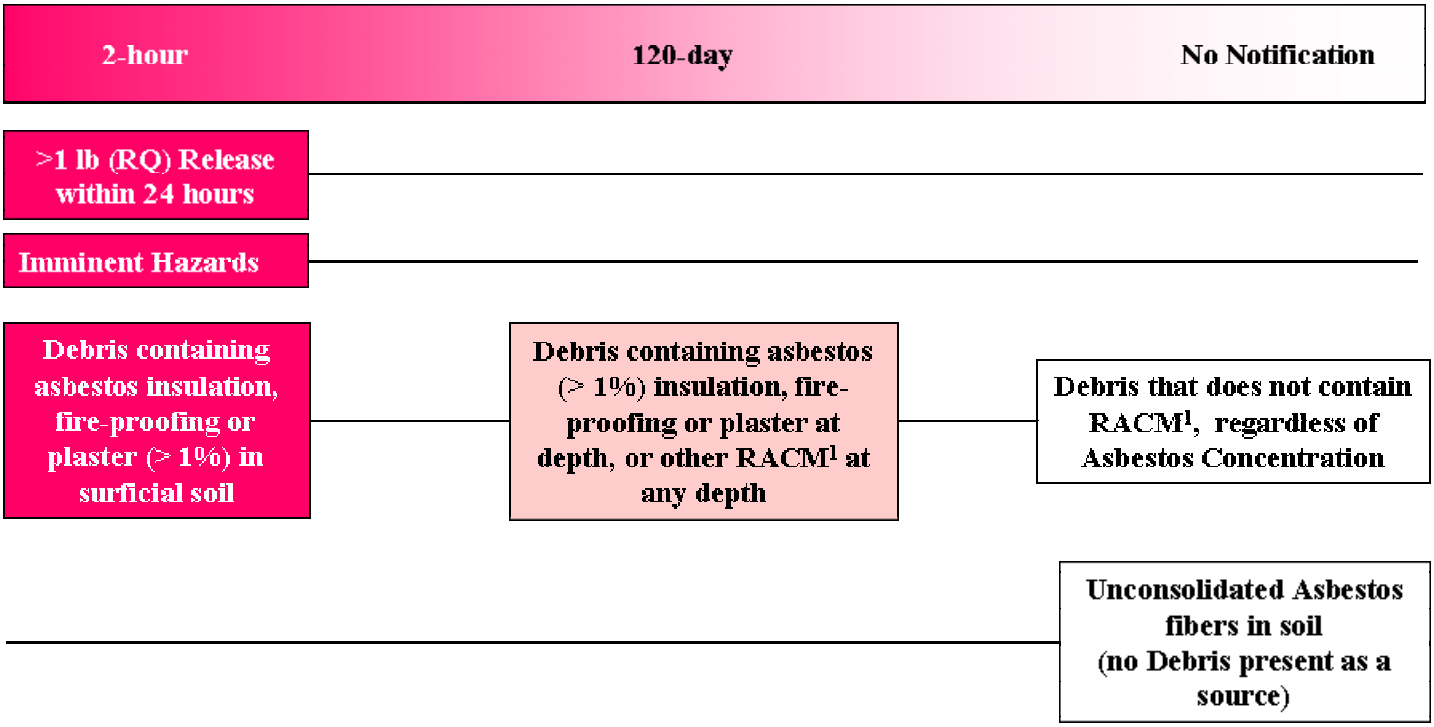
Notification, Assessment and Remediation of Asbestos in Soil – Conceptual Process (Coordinated BWSC/BWP Response)



Draft – Paul Locke, DEP BWSC 7/29/03

Figure 2

Proposed MCP Notification Requirements Applicable to Asbestos



[1] RACM ("Regulated Asbestos-Containing Material") is (a) friable asbestos material (e.g., thermal, fire-proofing or acoustic insulation), (b) Category I non-friable ACM (e.g., gaskets, resilient floor covering or asphalt roofing product) that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting or abrading, or (d) Category II non-friable ACM (cementious pipe, shingles, roof tiles) that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material…(EPA-340/1-90-018)

Figure 3

Options for Demonstrating "No Significant Risk" (NSR) for Closure Under the MCP

Eliminate/Control All "Continuing Sources", and Demonstrate One (or a Combination) of the Following Conditions:

1. **Achieve "non-detect" levels of asbestos in soil**
   - No "chunks" of ACM
   - PLM with some percentage TEM confirmatory samples

2. **Achieve "background" levels of asbestos in soil**
   - Site-specific background would be determined

3. **Eliminate exposure pathways**
   - Cover with paving, cap or building
   - Cover with 3 feet clean soil

4. **Demonstrate NSR using a quantitative risk assessment**
   - Superfund (Elutriator) Method to measure asbestos in respirable dust, combined with estimates/model of respirable dust concentration in air

   $$\text{Risk} = [\text{Asbestos}]_{PM10} \times [PM_{10}]_{air} \times \text{Inhalation Exposure} \times \text{Unit Risk}_{asbestos}$$

5. **Demonstrate NSR using another site-specific approach**

Table 1
Asbestos-In-Soil Notification Proposal

Discussion Reference Number	Depth	MCP Notification 2hr	MCP Notification 120 day	MCP Notification None	Current BWP Notification 10-day	Current BWP Notification None	Asbestos Concentration	Description	Environmental Medium	Additional Conditions
1.a.	any			X		X	Non-Detect	unconfined fibers	soil	
1.b.	any			X		X	Non-Detect	friable or non-friable	Debris	
2.a.	any	Governed by site-specific conditions, as determined by rules 3-7 below			X		any	unconfined fibers	soil	encountered during excavation in any area
2.b.	any				X		any	friable or non-friable	Debris	encountered during excavation in any area
3.a.	any	X				X[1]		unconfined fibers	soil	site-specific Imminent Hazard
3.b.	any	X				X[1]		friable or non-friable	Debris	site-specific Imminent Hazard
4.a.	any	X				X[1]	> 1 lb	unconfined fibers	soil	existing Reportable Quantity (RQ)
4.b.	any	X				X[1]	> 1 lb	friable or non-friable	Debris	existing Reportable Quantity (RQ)
5.a.	0 - 1'			X		X[1]	> 1%	unconfined fibers	soil	in all areas
5.b.	0 - 1'			X		X[1]	< 1%	unconfined fibers	soil	in all areas
6.a.	0 - 1'	X				X[1]	> 1%	friable	Debris	insulation material
6.b.	0 - 1'		X			X[1]	> 1%	RACM	Debris	now friable material from non-friable source
6.c.	0 - 1'			X		X[1]	> 1%	non-friable	Debris	currently non-friable and likely to remain so
6.d.	0 - 1'			X		X[1]	< 1%	friable or non-friable	Debris	in all areas
7.a.	deeper than 1'			X		X[1]	> 1%	unconfined fibers	soil	in all areas
7.b.	deeper than 1'			X		X[1]	< 1%	unconfined fibers	soil	in all areas
7.c.	deeper than 1'		X			X[1]	> 1%	friable	Debris	insulation material
7.d.	deeper than 1'		X			X[1]	> 1%	RACM	Debris	now friable material from non-friable source
7.e.	deeper than 1'			X		X[1]	> 1%	non-friable	Debris	currently non-friable and likely to remain so
7.f.	deeper than 1'			X		X[1]	< 1%	friable or non-friable	Debris	in all areas

1. Unless there is active management of the contaminated soil ("shovel in ground") such as excavation and disposal or construction.

Debris - MCP defined term, 310 CMR 40.0006, solid material that is a manufactured object, plant or animal matter that is intended for disposal or is no longer serving its intended use, including demolition and construction waste.